

REMARKS

Applicants thank the Examiner for the examination to date and respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims

Claim 1 is currently amended, with ample support in the specification, for example, at page 33, line 14, and in the claims as originally filed. Entry of the amendment is therefore warranted because the amendment does not add new matter. Upon such entry, claims 1-20 will be pending, with claims 3 and 10-20 withdrawn. Accordingly, claims 1-2 and 4-9 are presented for examination on the merits.

The Claims Are Not Anticipated Or Rendered Obvious By The Cited Art

Claims 1-2 and 4-9 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over WO 00/15691 ("Charnock"), WO 02/25764 ("Hickner") or U.S. Patent No. 5,985,477 ("Iwasaki"). Applicants respectfully traverse the rejections.

(A) Charnock, Hickner And Iwasaki Do Not Anticipate The Present Claims

Charnock, Hickner and Iwasaki do not teach every element recited in the present claims and, thus, these references cannot anticipate the present claims. The present claims recite a direct methanol-type full cell. Iwasaki makes no mention of a direct methanol-type cell and does not recite the term methanol. Although methanol appears in Charnock, it is only as part of an acetone/methanol wash. Finally, Hickner does not teach the importance of the claimed ratio (R) or any ratio at all for the polymer.

To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either expressly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed.Cir.1997). Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances

is not sufficient. *Scaltech, Inc. v. Retec/Tetra L.L.C.*, 156 F.3d 1193 (Fed.Cir. 1999).

Occasional results are not inherent. *Mehl/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1365 (Fed.Cir. 1999).

Because Charnock, Hickner and Iwasaki do not teach each and every element recited in present independent claim 1, their teachings cannot anticipate present claim 1, or its corresponding dependent claims. Therefore, at least in view of the foregoing, the Applicants respectfully request that the anticipation rejection be withdrawn.

(B) The Prior Art's Teachings Do Not Render the Present Claims Obvious

i. Current Obviousness Standard

The U.S. Supreme Court reaffirmed the Graham factors for determining obviousness in *KSR Int'l Co. v. Teleflex Inc.* (No. 04-1350) (U.S., April 30, 2007). The Graham factors, as outlined by the Supreme Court in *Graham et al. v. John Deere Co. of Kansas City et al.*, 383 U.S. 1 (1966), are: 1) determining the scope and contents of the prior art; 2) ascertaining the differences between the claimed invention and the prior art; 3) resolving the level of ordinary skill in the pertinent art; and 4) evaluating evidence of secondary consideration. The Supreme Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a) and held that the proper inquiry for determining obviousness is whether the improvement is more than the predictable use of prior art elements according to their established functions. The Court noted that it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed and specifically stated:

Often, it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

KSR Int'l Co. v. Teleflex Inc., slip op. at 14 (emphasis added). As discussed below, the cited art cannot render the claimed invention obvious.

ii. The Present Claims Are Not Obvious

As noted above, none of the cited references teaches every element of the claimed invention. In addition, the surprising findings of the present application would not have been obvious based on the prior art's teachings. The claimed invention is derived from the finding that polymer electrolytes which satisfy the formula $1 > R \geq 0.15$ exhibit lower methanol permeation coefficients than polymer electrolytes failing to satisfy the inequality, as evidenced by the data provided in Table 2. The inventors identified the use of such a polymer electrolyte satisfying the above inequality as a constituent of a direct methanol-type fuel cell and which would contribute to the reduction in overvoltage at a cathode of this specific type of fuel cell. *See* page 1, line 10 to page 4, line 10 of the Specification regarding the Background of this issue.

None of the cited references teaches or suggest that polymer electrolytes satisfying the formula recited in claim 1 are so low in their methanol permeation coefficient that they are suitable as a constituent of a direct methanol-type fuel cell. Therefore, the subject-matter of the current claims, i.e., the direct methanol-type fuel cells comprising a polymer electrolyte specified by this formula, are not obvious over any of the cited references. As noted above, Iwasaki makes no mention of a direct methanol-type cell and does not recite the term methanol. Although methanol appears in Charnock it is only as part of an acetone/methanol wash. Finally, Hickner does not teach the importance of the claimed ratio (R) or any ratio at all for the polymer.

Therefore, at least in view of the foregoing, the Applicants respectfully request that the obviousness rejection be withdrawn.

CONCLUSION

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date APR 13 2011

By 

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